

Case 2955

***Iodotropheus sprengerae* Oliver & Loiselle, 1972 (Osteichthyes, Perciformes): proposed replacement of holotype by a neotype**

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Abstract. The purpose of this application is to conserve the specific name of *Iodotropheus sprengerae* Oliver & Loiselle, 1972 for a small, rock-dwelling fish (family CICHLIDAE) endemic to Lake Malawi, East Africa. *I. sprengerae* is the type species of *Iodotropheus* Oliver & Loiselle, 1972. The description of the taxon was based on aquarium-reared, possibly hybridized, specimens, the original brood stock of which was purported to have been collected from Boadzulu Island in the southeast of the lake, where the species does not occur. The holotype is not within the morphological range of wild specimens. It is proposed that the type material be set aside and a wild-caught specimen from Chinyankwazi Island, where the species is now known to occur, be designated as the neotype. The species is popular as an aquarium fish and is commonly known as the rusty cichlid.

Keywords. Nomenclature; taxonomy; Osteichthyes; CICHLIDAE; rusty cichlid; *Iodotropheus sprengerae*; Lake Malawi.

1. Oliver & Loiselle (1972, p. 310) established the genus *Iodotropheus* for a small, rock-dwelling cichlid fish endemic to Lake Malawi, East Africa. They described and illustrated (p. 310, figs. 1–7) the single included species *Iodotropheus sprengerae*, which is thus the type by monotypy. The description was based on the holotype (a mature male, catalogue no. BM(NH) 1971.9.8.5 in the Natural History Museum, London) and seven paratypes (a male and two females BM(NH) 1971.9.8.6–8 in London; and three males and one female USNM 20712–5 in the U.S. National Museum, Washington, D.C.).

2. Oliver & Loiselle (1972, p. 315) asserted that *Iodotropheus sprengerae* had been collected only at Boadzulu Island (14°11'S, 35°07'E) in the southeast arm of the lake, which is isolated by a broad expanse of sandy substrate. Boadzulu Island was thus the implicit type locality. Only in the acknowledgments (p. 319) did they state that all the type material consisted of aquarium-raised specimens, donated by aquarists, from different sources in the United States: Manhattan Beach, California; Los Gatos, California; Virginia Beach, Virginia; and Atlanta, Georgia.

3. Oliver and Loiselle presumed that the original stock exported for the tropical fish trade had originated from Boadzulu Island in southern Lake Malawi because populations of *Iodotropheus* spp. were observed there by Oliver while diving (Oliver & Loiselle, 1972, p. 316; P.V. Loiselle, personal communication); at the time of the description of *I. sprengerae* the existence of other *Iodotropheus* species was unknown to the authors. Konings (1989, p. 102; 1990b, p. 270) and Ribbink et al. (1983, p. 241) subsequently referred to *I. sprengerae* as occurring at Boadzulu, Chinyamwezi

(13°56'S, 35°00'E), and Chinyankwazi (13°53'S, 35°00'E) islands in Lake Malawi. The latter two islands are close together, whilst Boadzulu is further south. All the islands in the southeast arm of the lake show a high degree of fish endemism.

4. I (Stauffer, 1994) made a series of collections from all three islands and, utilizing morphological data, compared the population from Boadzulu Island with populations from Chinyamwezi-Chinyankwazi islands. I concluded that the two populations represented distinct species.

5. A study of the type material of *Iodotropheus sprengerae* demonstrated that it was most similar to (but not identical with) wild-caught specimens from Chinyamwezi and Chinyankwazi islands, and distinct from wild-caught material from Boadzulu Island. Thus, I (Stauffer, 1994) concluded that the population inhabiting Boadzulu Island represented a new species, which I described as *Iodotropheus declivatus*, and that *I. sprengerae* does not occur at this island.

6. I interviewed Stuart Grant, a current exporter of ornamental fishes from Lake Malawi, and discovered that the principal exporter of Malawian fishes in the early 1970s, P. Davies, the first to collect specimens of *Iodotropheus sprengerae*, was collecting fishes at all of the above three localities.

7. The locality of the original brood stock of *Iodotropheus sprengerae* is unknown but it may well have been Chinyamwezi and/or Chinyankwazi islands. The propensity for haplochromine cichlids to produce fertile hybrids in aquaria, that also backcross with the parental forms, and the mixing of wild-caught specimens with cultured ones throughout the aquarium trade, are widely recognized (Loiselle, 1971; McElroy & Kornfield, 1993, p. 934). The *I. sprengerae* holotype lies outside the morphological range of wild-caught specimens (see Stauffer, 1994, p. 335) and there is the possibility that it is the result of hybridization and/or back crosses in aquaria between individuals collected at Boadzulu Island with those collected from Chinyamwezi and Chinyankwazi islands.

8. Given the situation outlined above, one option would be to describe the taxon from Chinyamwezi and Chinyankwazi islands and that from Boadzulu Island as new species, noting that the name *I. sprengerae* (and hence *Iodotropheus*) was based on a description of aquarium-raised fishes of unknown provenance and geneology. However, fishes belonging to the genus *Iodotropheus* are easily recognized and the names *Iodotropheus* and *I. sprengerae* are commonly used in both the scientific and popular literature (see, for example, the recent works of Axelrod & Burgess, 1981; Eschmeyer, 1990; Jackson & Ribbink, 1975; Keenleyside, 1991; Konings, 1989, 1990a; Lewis, Reinthal & Trendall, 1986; Loiselle, 1985; McKaye & Gray, 1984; Ribbink et al., 1983). There are currently three recognized species of *Iodotropheus* in Lake Malawi and over time, as the Mozambique shoreline is more adequately sampled, there will undoubtedly be additional species discovered (see Stauffer, 1994). I therefore propose that the original type material of *Iodotropheus sprengerae* be set aside and a wild-caught specimen from Chinyankwazi Island (a male, no. PSU 2721, in the Fish Museum of The Pennsylvania State University), which I have described and illustrated (Stauffer, 1994, pp. 337–339, figs. 7 and 8), be designated as the neotype. This specimen is in accord with the subsequent usage of *I. sprengerae*. Such an action would be in accord with Recommendation 75E of the Code: 'Neotypes should be designated to clarify the application of names when their continued existence as nomina dubia threatens the stability of other names; if, despite the existence of a

holotype, or a lectotype, or syntypes, it is not possible to resolve a complex zoological problem, a zoologist should refer the case to the Commission which may, by the use of the plenary power, set aside the existing type material and designate a neotype.'

9. The International Commission of Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to set aside all previous fixations of type specimen for *Iodotropheus sprengerae* Oliver & Loiselle, 1972 and to designate as neotype the male specimen PSU 2721 in the Fish Museum, The Pennsylvania State University, U.S.A.;
- (2) to place on the Official List of Generic Names in Zoology the name *Iodotropheus* Oliver & Loiselle, 1972 (gender: masculine), type species by monotypy *Iodotropheus sprengerae* Oliver & Loiselle, 1972;
- (3) to place on the Official List of Specific Names in Zoology the name *sprengerae* Oliver & Loiselle, 1972, as published in the binomen *Iodotropheus sprengerae* (specific name of the type species of *Iodotropheus* Oliver & Loiselle, 1972) and as defined by the neotype designated in (1) above.

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